

CLAIMS


3. Claims 1-17 are canceled and replaced with claims 18-38.

Claims 1-17 (canceled)

Claims 18-38 (new)

Claim 18. A method of separating a substance from a non-atomically bonded combination or mixture of substances, comprising;

utilizing at least one chemical reaction to alter the molecular structure and alter at least one physical characteristic of a substance other than a polypeptide or an enzyme by adding at least one atom to the molecular structure of said substance other than a polypeptide or an enzyme, or by removing at least one atom from the molecular structure of said substance other than a polypeptide or an enzyme,

utilizing a mechanical means of separation that uses at least one differing physical characteristic of matter to physically change the place or position of matter that removes or isolates the matter from said non-atomically bonded combination or mixture of substances absent any chemical reaction,

impacting said non-atomically bonded combination or mixture of substances that contains said substance other than a polypeptide or an enzyme with said at least one chemical reaction to alter the molecular structure and alter at least one physical characteristic of said substance other than a polypeptide or an enzyme by adding at least one atom to the molecular structure of said substance other than a polypeptide or an enzyme, or by removing at least one atom from the molecular structure of said substance other than a polypeptide or an enzyme,

reacting said at least one chemical reaction that alters the molecular structure and alters at least one physical characteristic of said substance other than a polypeptide or an enzyme, by adding at least one atom to the molecular structure of said substance other than a polypeptide or an enzyme, or by removing at least one atom from the molecular structure of said substance other than a polypeptide or an enzyme with said non-atomically bonded combination or mixture of substances that contains said substance other than a polypeptide or an enzyme which does alter the molecular structure and does alter a physical characteristic of said substance other than a polypeptide or an enzyme that is in said non-atomically bonded combination or mixture of substances, and

separating said substance other than a polypeptide or an enzyme with altered molecular structure and altered at least one physical characteristic from said non-atomically bonded combination or mixture of substances by utilizing said mechanical means of separation that uses at least one differing physical characteristic of matter to physically change the place or position of matter that removes or isolates the matter from said non-atomically bonded combination or mixture absent any chemical reaction.

Claim 19. A method of separating a substance from a non-atomically bonded combination or mixture of substances, comprising;

utilizing at least one chemical reaction to alter the molecular structure and alter at least one physical characteristic of said substance by removing at least one atom from the molecular structure of said substance,

utilizing a mechanical means of separation that uses at least one differing physical characteristic of matter to physically change the place or position of matter that removes or isolates the matter from said non-atomically bonded combination or mixture of substances absent any chemical reaction,

impacting said non-atomically bonded combination or mixture of substances that contains said substance with said at least one chemical reaction to alter the molecular structure and alter at least one physical characteristic of said substance by removing at least one atom from the molecular structure of said substance,

reacting said at least one chemical reaction that alters the molecular structure and at least one physical characteristic of said substance by removing at least one atom from the molecular structure of said substance with said non-atomically bonded combination or mixture of substances that contains said substance which does alter the molecular structure of said substance and does alter a physical characteristic of said substance that is in said non-atomically bonded combination or mixture of substances, and

separating said substance with altered molecular structure and altered at least one physical characteristic from said non-atomically bonded combination or mixture of substances by utilizing said mechanical means of separation that uses at least one differing physical characteristic of matter to physically change the place or position of matter that removes or isolates the matter from said non-atomically bonded combination or mixture absent any chemical reaction.

Claim 20. A method of separating cellulose from a non-aqueous non-atomically bonded combination or mixture of substances, comprising;

utilizing at least one organic chemical reaction to alter the molecular structure of cellulose and alter at least one physical characteristic of cellulose by adding at least one atom to the molecular structure of cellulose,

utilizing a mechanical means of separation that uses at least one differing physical characteristic of matter to physically change the place or position of matter that removes or isolates the matter from a non-atomically bonded combination or mixture of substances absent any chemical reaction,

impacting said non-aqueous non-atomically bonded combination or mixture of substances that contains cellulose with said at least one organic chemical reaction to alter the molecular structure and alter at least one physical characteristic of the cellulose by adding at least one atom to the molecular structure of the cellulose,

reacting the cellulose contained in said non-aqueous non-atomically bonded combination or mixture of substances with said at least one organic chemical reaction to alter the molecular structure and alter at least one physical characteristic of the cellulose that does alter the molecular structure and does alter at least one physical characteristic of the cellulose by adding at least one atom to the molecular structure of the cellulose, and

separating the cellulose with the altered molecular structure and the altered at least one physical characteristic from said non-aqueous non-atomically bonded combination or mixture of substances by using said mechanical means of separation that uses the altered at least one physical characteristic of the cellulose to physically change the place or position of the altered cellulose that removes or isolates the altered cellulose from said non-aqueous non-atomically bonded combination or mixture of substances absent any chemical reaction.


Claim 21. The method of claim 18 comprising, using another one or more chemical reactions to reconstruct the altered molecular structure and the altered at least one physical characteristic of said substance other than a polypeptide or an enzyme to the original molecular structure and to the original state of the at least one physical characteristic of said substance other than a polypeptide or an enzyme that existed prior to the separation by said mechanical means of separation.

Claim 22. The method of claim 18 comprising, using any mechanical means of separation prior to reacting said at least one chemical reaction that alters the molecular structure and alters at least one physical characteristic of said substance other than a polypeptide or an enzyme, by adding at least one atom to the molecular structure of said substance other than a polypeptide or an enzyme, or by removing at least one atom from the molecular structure of said substance other than a polypeptide or an enzyme with said non-atomically bonded combination or mixture of substances which does alter the molecular structure and does alter a physical characteristic of said substance other than a polypeptide or an enzyme that is in said non-atomically bonded combination or mixture of substances.

Claim 23. The method of claim 18 comprising, using a chemical reaction to alter the molecular structure of matter and to alter the specific gravity of matter in said non-atomically bonded combination or mixture of substances by removing at least one atom from the molecular structure of the matter.

Claim 24. The method of claim 18 comprising, using specific gravity flotation as the mechanical means of separation that utilizes at least two different liquids as the base solutions each having a different specific gravity.

Claim 25. The method of claim 18 comprising, using magnetic attraction as the mechanical means of separation.

 Claim 26. The method of claim 19 comprising, using another one or more chemical reactions to reconstruct the altered molecular structure and the altered at least one physical characteristic of said substance to the original molecular structure and to the original state of the at least one physical characteristic of said substance that existed prior to the separation by said mechanical means of separation.

Claim 27. The method of claim 19 comprising, using any mechanical means of separation prior to reacting said at least one chemical reaction that alters the molecular structure and at least one physical characteristic of said substance by removing at least one atom from the molecular structure of said substance with said non-atomically bonded combination or mixture of substances which does alter the molecular structure and does alter a physical characteristic of said substance that is in said non-atomically bonded combination or mixture of substances.

Claim 28. The method of claim 19 comprising, using a chemical reaction to alter the molecular structure of matter and to alter the specific gravity of matter in said non-atomically bonded combination or mixture of substances by removing at least one atom from the molecular structure of the matter.

Claim 29. The method of claim 19 comprising, using specific gravity flotation as the mechanical means of separation that utilizes at least two different liquids as the base solutions each having a different specific gravity.

Claim 30. The method of claim 19 comprising, using magnetic attraction as the mechanical means of separation.

Claim 31. The method of claim 20 comprising, using another one or more chemical reactions to reconstruct the cellulose with the altered molecular structure and the altered at least one physical characteristic to the original molecular structure of the cellulose and to the original state of the at least one physical characteristic of the cellulose that existed prior to the separation by said mechanical means of separation.

Claim 32. The method of claim 20 comprising, using any mechanical means of separation prior to reacting the cellulose contained in said non-aqueous non-atomically bonded combination or mixture of substances with said at least one organic chemical reaction to alter the molecular structure of the cellulose and alter at least one physical characteristic of the cellulose that does alter the molecular structure and does alter at least one physical characteristic of the cellulose by adding at least one atom to the molecular structure of the cellulose.

91 Claim 33. The method of claim 20 comprising, using a chemical reaction to alter the molecular structure of the cellulose and to alter the specific gravity of the cellulose in said non-aqueous non-atomically bonded combination or mixture of substances by adding at least one atom from the molecular structure of the matter.

Claim 34. The method of claim 20 comprising, using specific gravity flotation as the mechanical means of separation that utilizes at least two different liquids as the base solutions each having a different specific gravity.

Claim 35. The method of claim 20 comprising, using magnetic attraction as the mechanical means of separation.

Claim 36. The method of claim 20 comprising, using said at least one organic chemical reaction to alter the molecular structure and to alter at least one physical characteristic of cellulose by adding a ketone compound or an aldehyde compound to the molecular structure of cellulose.

Claim 37. The method of claim 20 comprising, reacting cellulose that has carboxylic acid groups on the cellulose molecule from a previous oxidation reaction with an alcohol compound that bonds to the carboxylic acid groups on the cellulose molecule.

Claim 38. The method of claim 20 comprising, using at least one organic chemical reaction to alter the molecule structure of cellulose and remove lignin from the intermolecular bond with cellulose without forming a carboxylic acid group or a ketone group on the cellulose.

Conclusion

4. The claims of the present invention have been amended in light Horowitz et al. and Schneider. The claims have been amended so that all separation occurs in a non-atomically bonded combination or mixture of substances. Some claims have been amended so that a substance other than a polypeptide or an enzyme is involved in the chemical reaction. Some claims specify cellulose as the reactant and the substance to be separated. Other claims specify that the reaction must remove at least one atom from the molecule that is the opposite of the reaction taught by Schneider. Froth flotation does not require a chemical reaction to alter a molecule structure so that a mechanical means of froth separation can be successfully used to separate out any substance from a mixture. At least no such process was disclosed in the references at this point in time. Therefore, froth flotation as demonstrated is not relevant at this point to the present invention claimed. The Schneider reference is too narrowly defined in the abstract, specification and claims to anticipate or to be obvious regarding the present invention claimed.

Request for Constructive Assistance

5. The undersigned has made a diligent effort to amend the claims of this application so that they will comply structurally and in light of prior art. If, for any reason, the claims of this application are not believed to be in full condition of allowance, applicant respectfully requests the constructive assistance and suggestions of the Examiner in drafting acceptable claims pursuant to MPEP 707.07(3) or in making constructive suggestions pursuant to MPEP 706.03 (d) in order that this application can be placed in allowable condition as soon as possible and without the need for further proceedings.

Very Respectfully,

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I hereby certify that this
correspondence will be
deposited with U.S. Postal
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Date: 12/18/2003

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